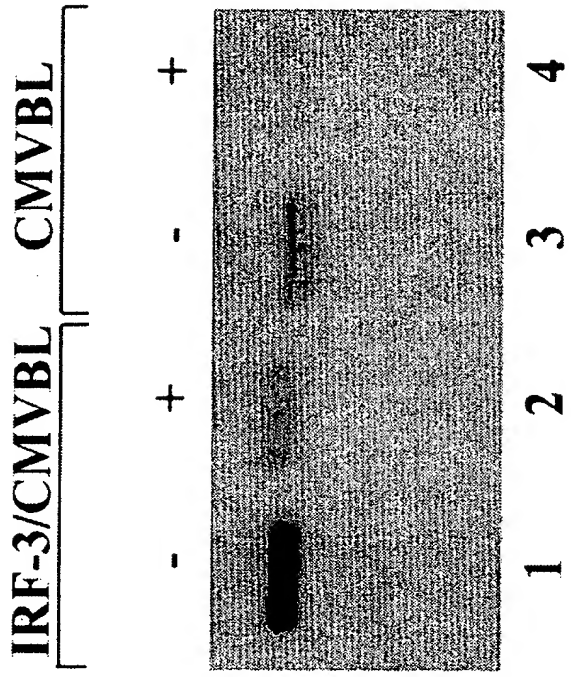

FIG. 1

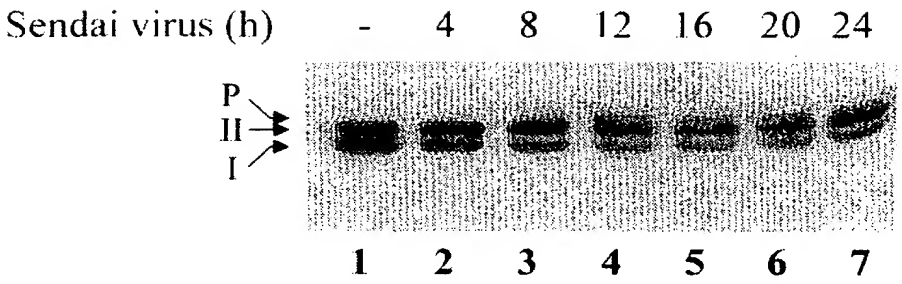
Sendai virus (h) - 4 8 12 16 20 24
P
II
I
1 2 3 4 5 6 7

FIG. 2A

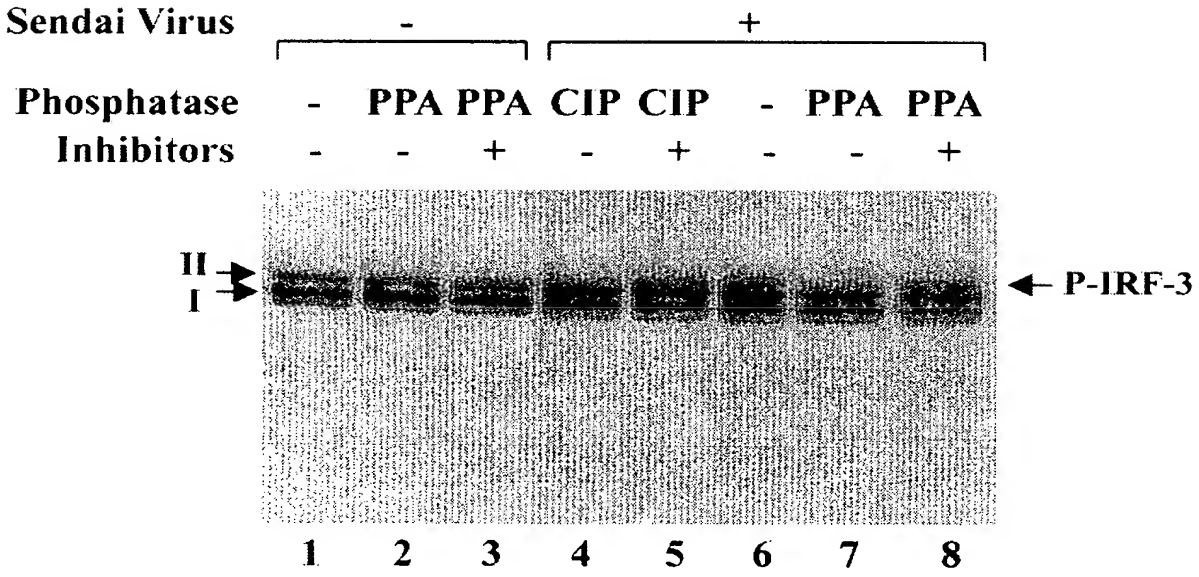
Sendai Virus - +
Phosphatase - PPA PPA CIP CIP - PPA PPA
Inhibitors - - + - + - - +
II
I
P-IRF-3
1 2 3 4 5 6 7 8

FIG. 2B

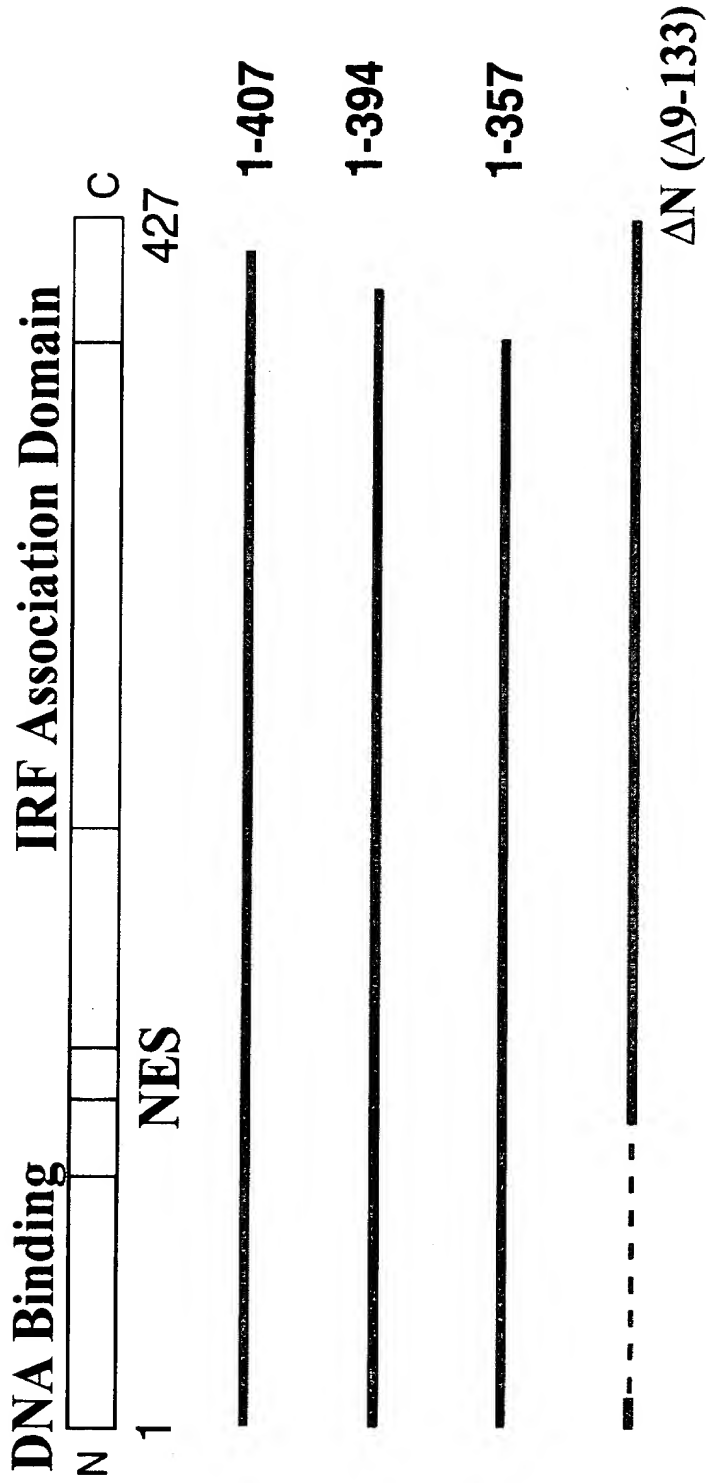
DNA Binding
IRF Association Domain
N
C
1
NES
427
1-407
1-394
1-357
ΔN (Δ9-133)

FIG. 3A

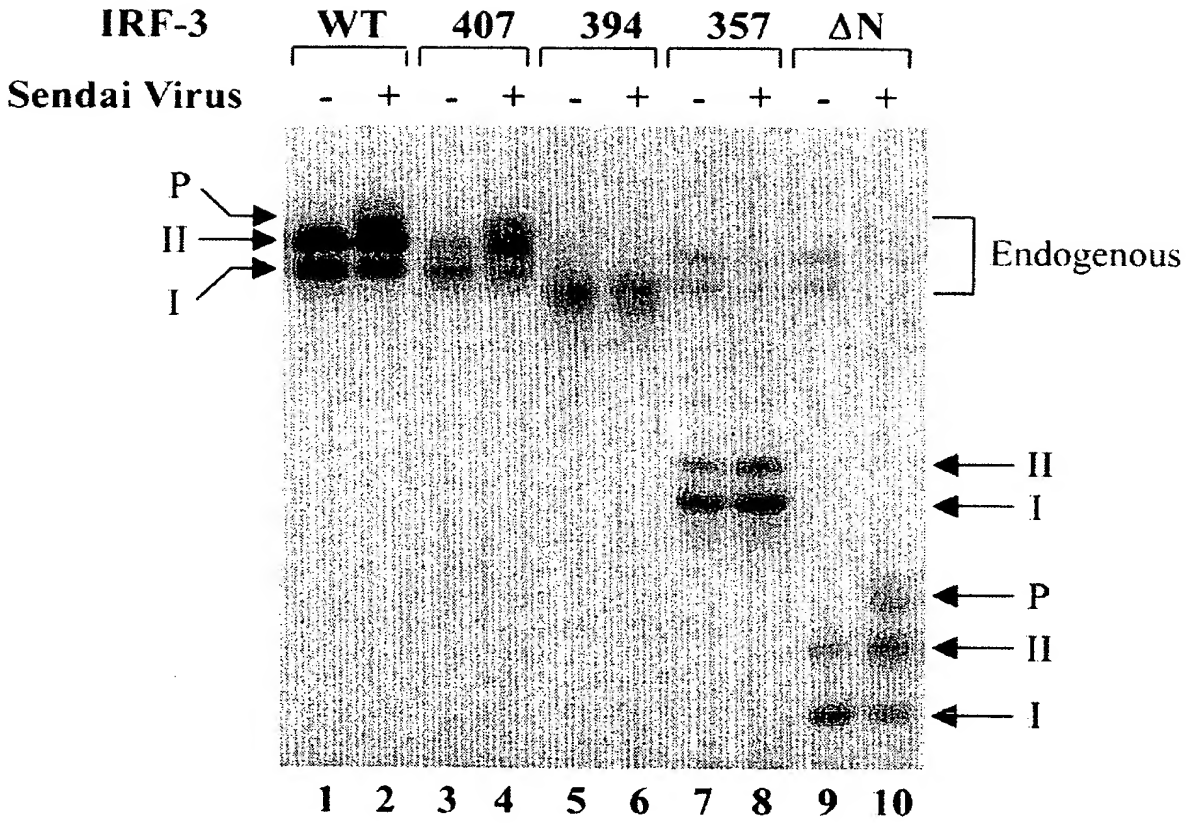
IRF-3
WT
407
394
357
ΔN
Sendai Virus
- + - + - + - + - +
P
II
I
Endogenous
II
I
P
II
I
1 2 3 4 5 6 7 8 9 10

FIG. 3B

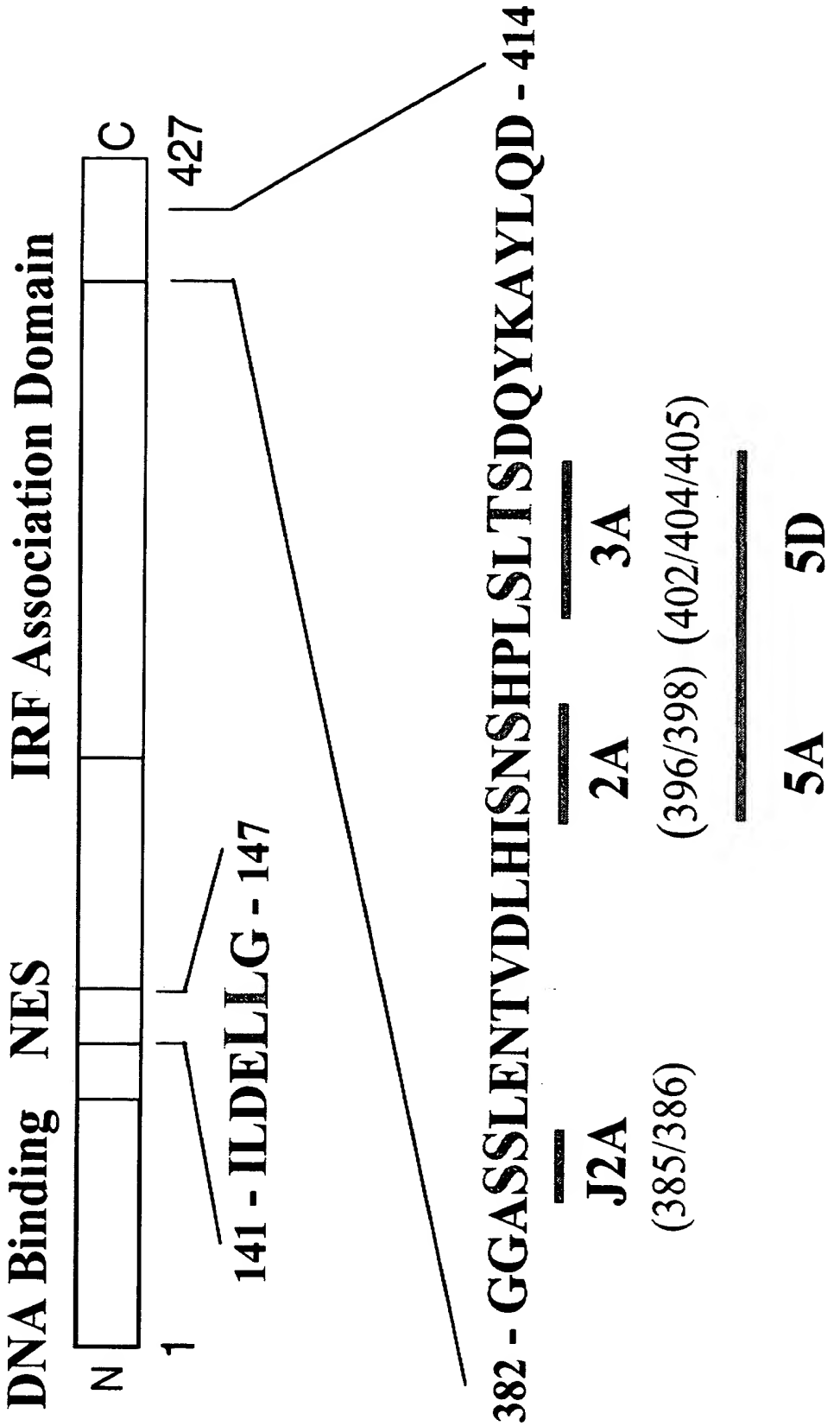
DNA Binding
NES
IRF Association Domain
N
C
1
427
141 - ILDELLG - 147
382 - GGASSLENTVDLHISNSHPLSLTSDQYKAYLQD - 414
J2A
(385/386)
2A
3A
(396/398)
(402/404/405)
5A
5D

FIG. 4A

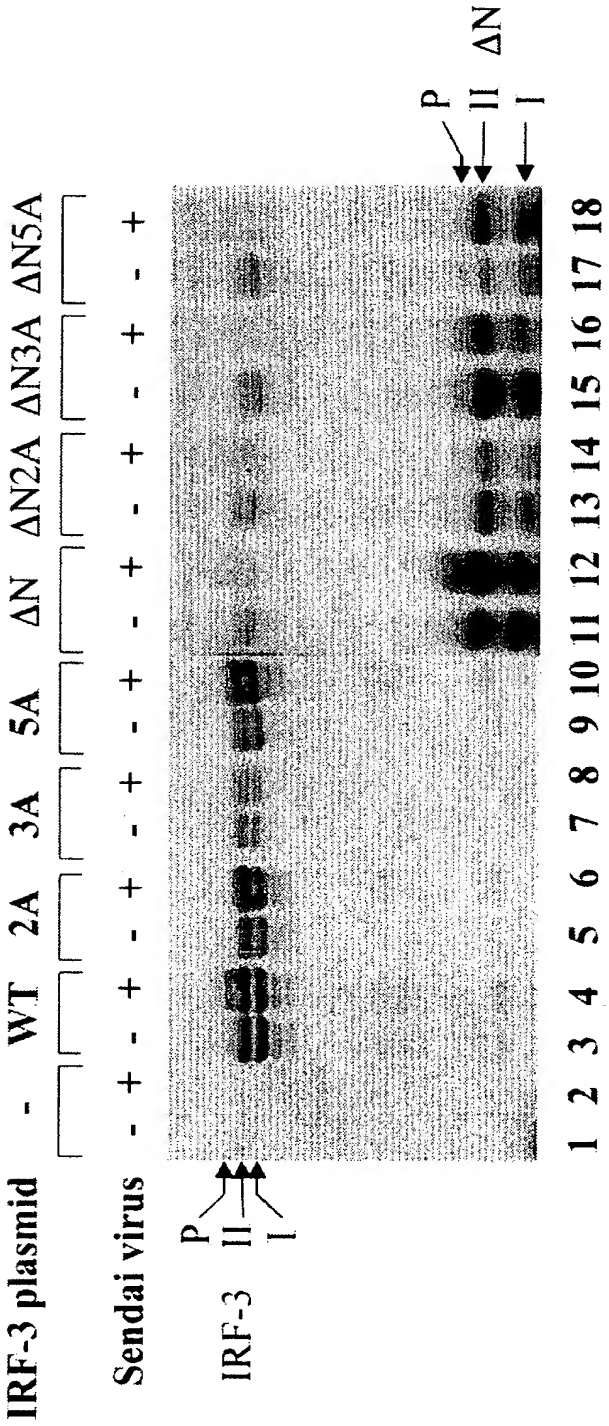
IRF-3 plasmid
-
WT
2A
3A
5A
ΔN
ΔN2A
ΔN3A
ΔN5A
Sendai virus
- + - + - + - + - + - + - + - + - +
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
IRF-3
P
II
I
P
II
I
ΔN

FIG. 4B

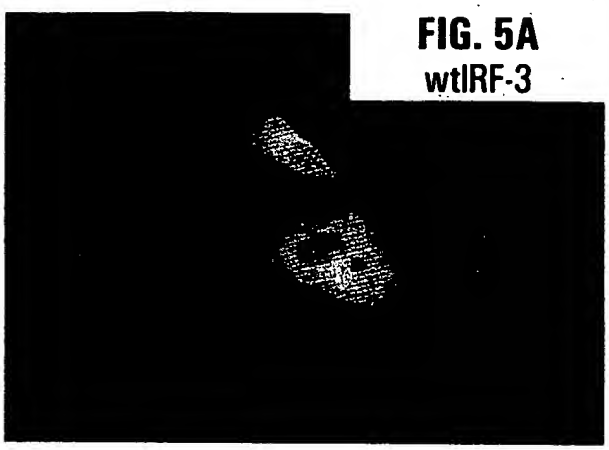

FIG. 5A
wtIRF-3

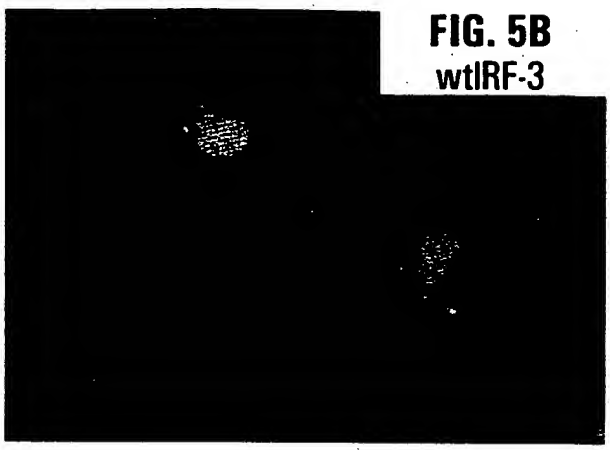

FIG. 5B
wtIRF-3

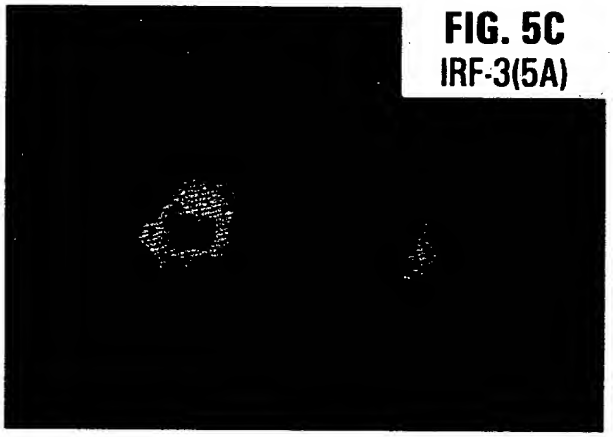

FIG. 5C
IRF-3(5A)

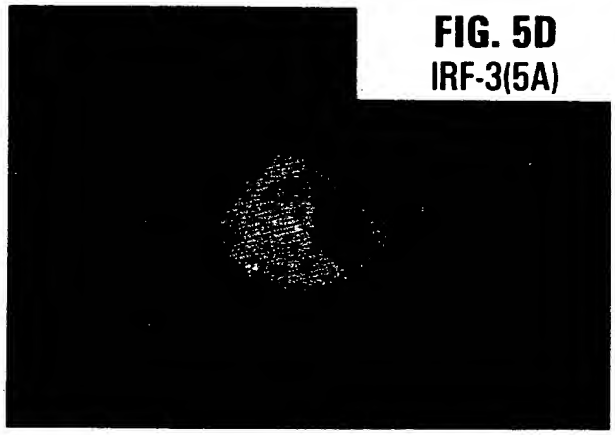

FIG. 5D
IRF-3(5A)

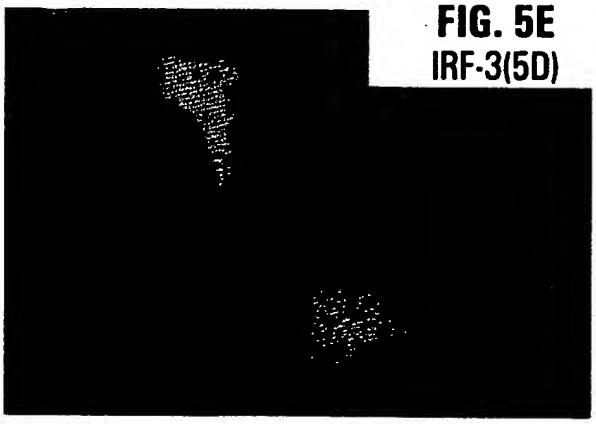

FIG. 5E
IRF-3(5D)

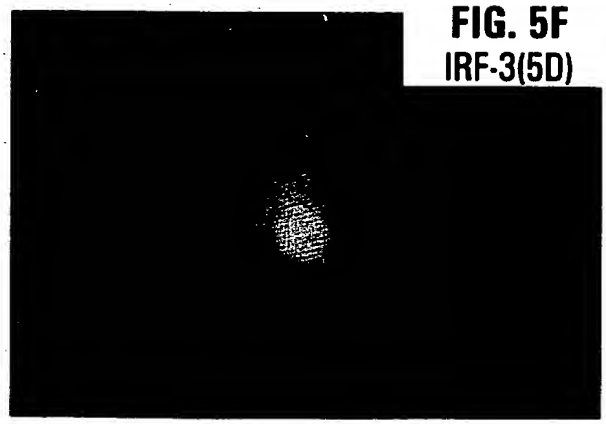

FIG. 5F
IRF-3(5D)

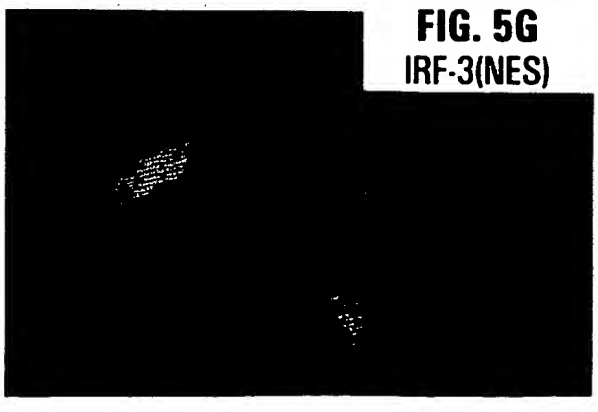

FIG. 5G
IRF-3(NES)

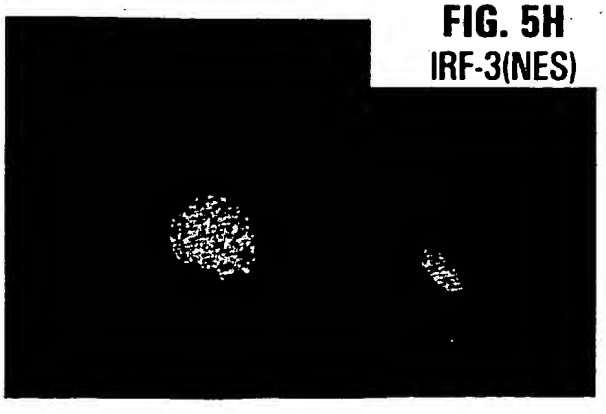

FIG. 5H
IRF-3(NES)

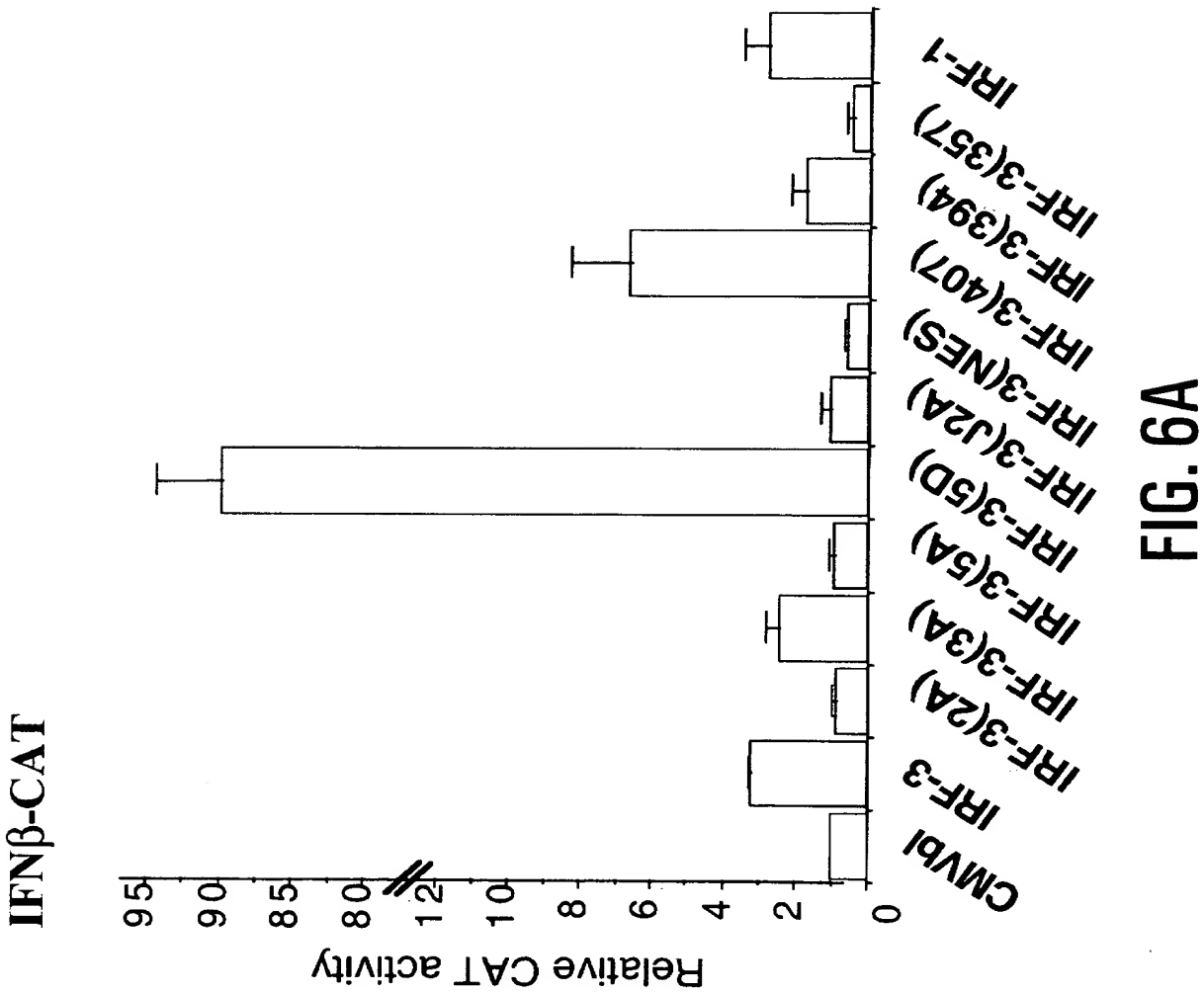
IFNβ-CAT
Relative CAT activity
0
2
4
6
8
10
12
80
85
90
95
CMVbl
IRF-3
IRF-3(2A)
IRF-3(3A)
IRF-3(5A)
IRF-3(5D)
IRF-3(J2A)
IRF-3(NES)
IRF-3(407)
IRF-3(394)
IRF-3(357)
IRF-1

FIG. 6A

Serial No. 09/647,965
Inventor: Hiscott et al.
Docket: A33606 PCT USA
Attorney: Rochelle K. Seide
212.408.2626

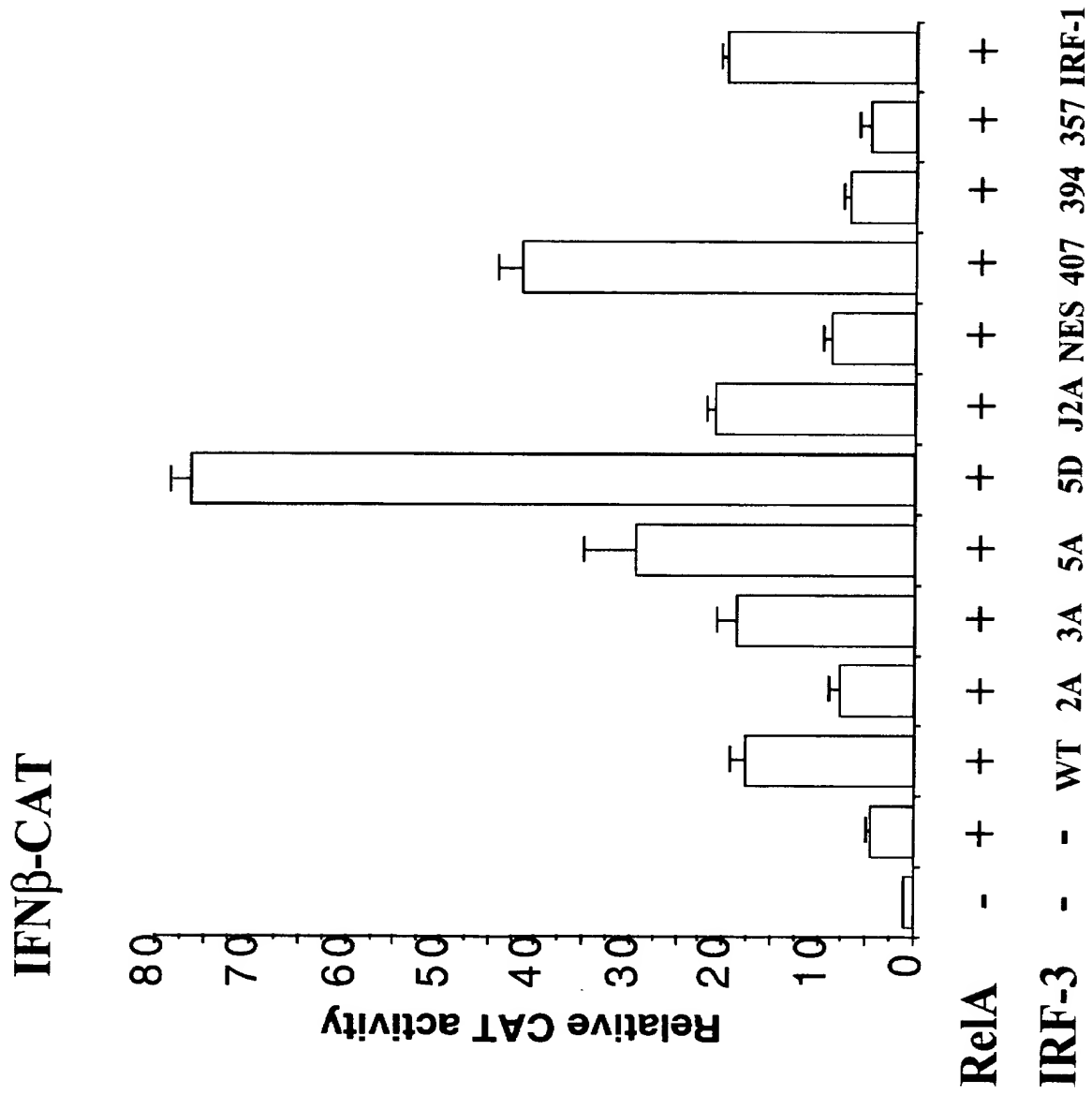

FIG. 6B

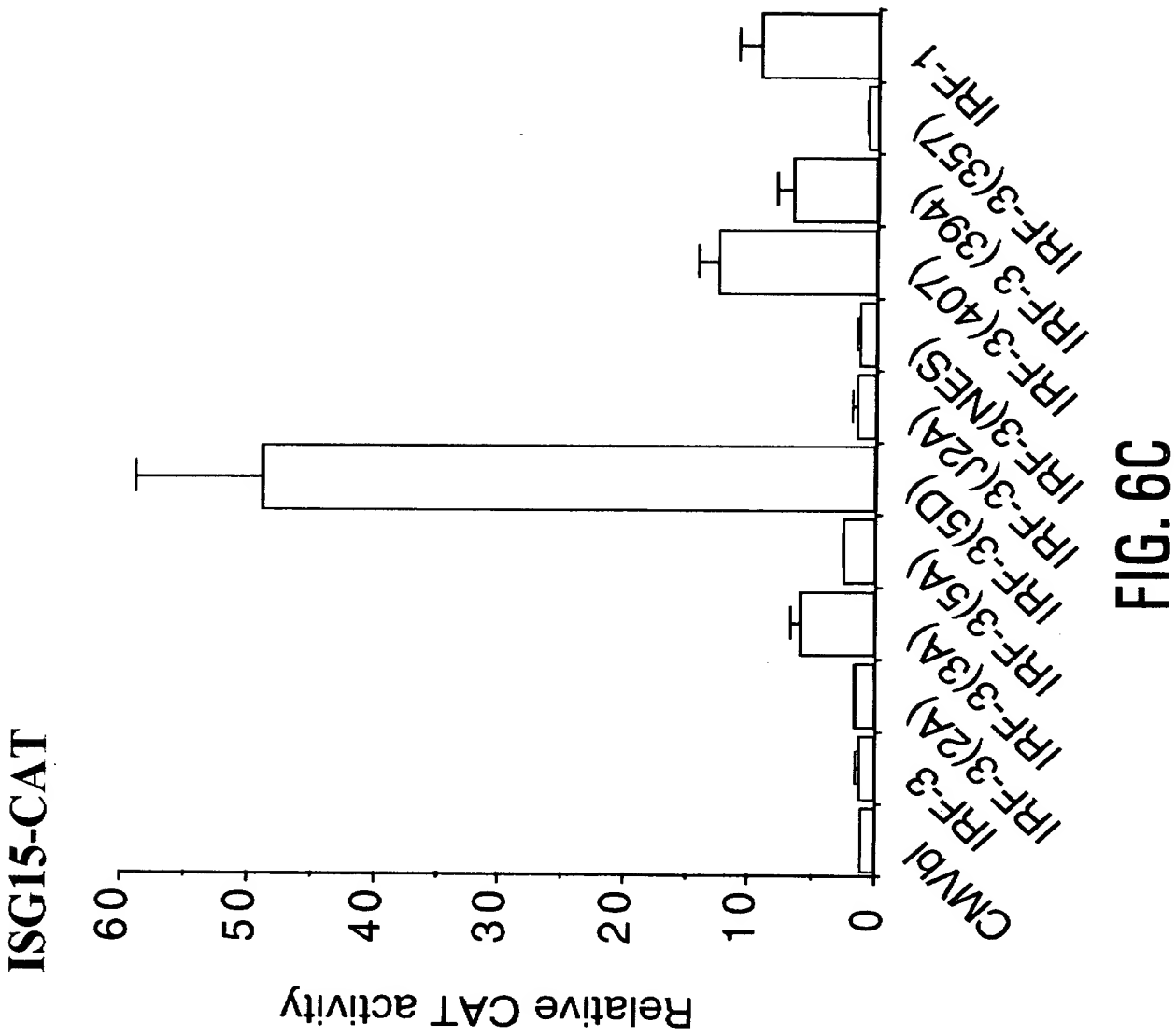
ISG15-CAT
Relative CAT activity
0
10
20
30
40
50
60
CMVbl
IRF-3
IRF-3(2A)
IRF-3(3A)
IRF-3(5A)
IRF-3(5D)
IRF-3(J2A)
IRF-3(NES)
IRF-3(407)
IRF-3 (394)
IRF-3(357)
IRF-1

FIG. 6C

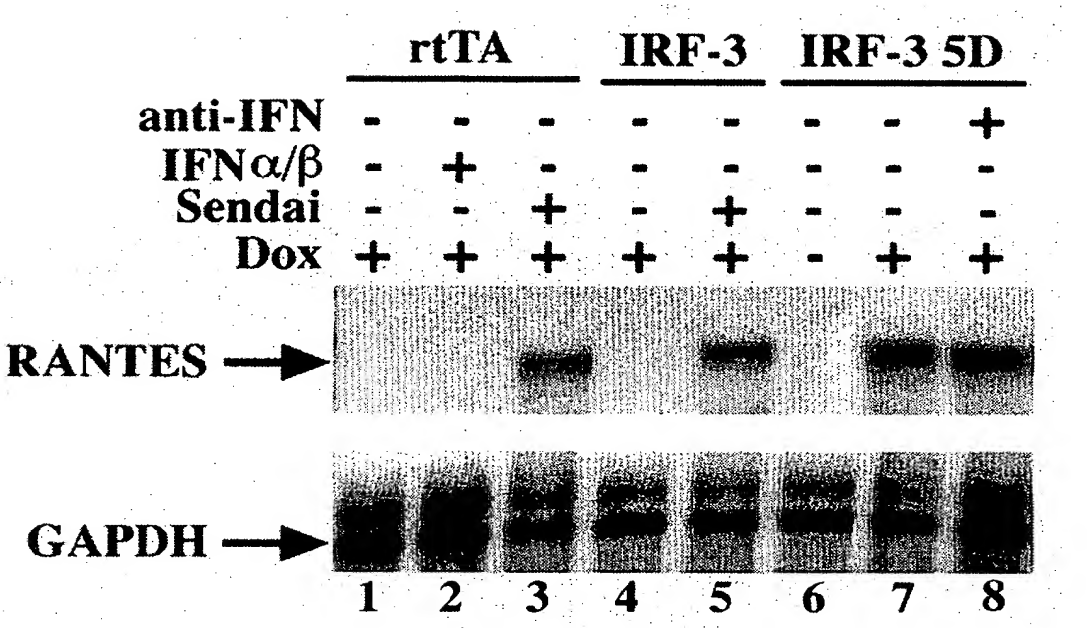
rtTA
IRF-3
IRF-3 5D
anti-IFN - - - - - - - +
IFNα/β - + - - - - - -
Sendai - - + - + - - -
Dox + + + + + - + +
RANTES
GAPDH
1 2 3 4 5 6 7 8

FIG. 7A

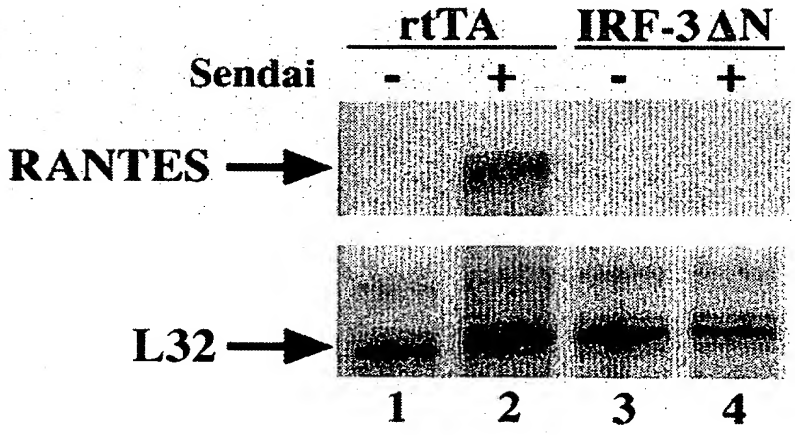
rtTA
IRF-3ΔN
Sendai - + - +
RANTES
L32
1 2 3 4

FIG. 7B

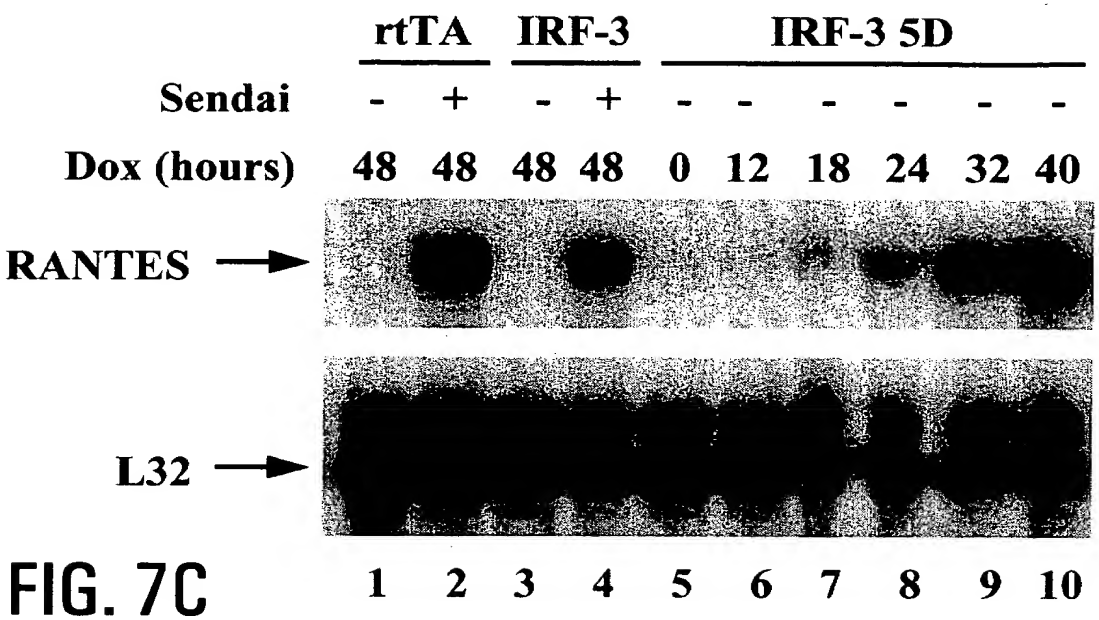
rtTA
IRF-3
IRF-3 5D
Sendai
- + - + - - - - - -
Dox (hours)
48 48 48 48 0 12 18 24 32 40
RANTES
L32
1 2 3 4 5 6 7 8 9 10

FIG. 7C

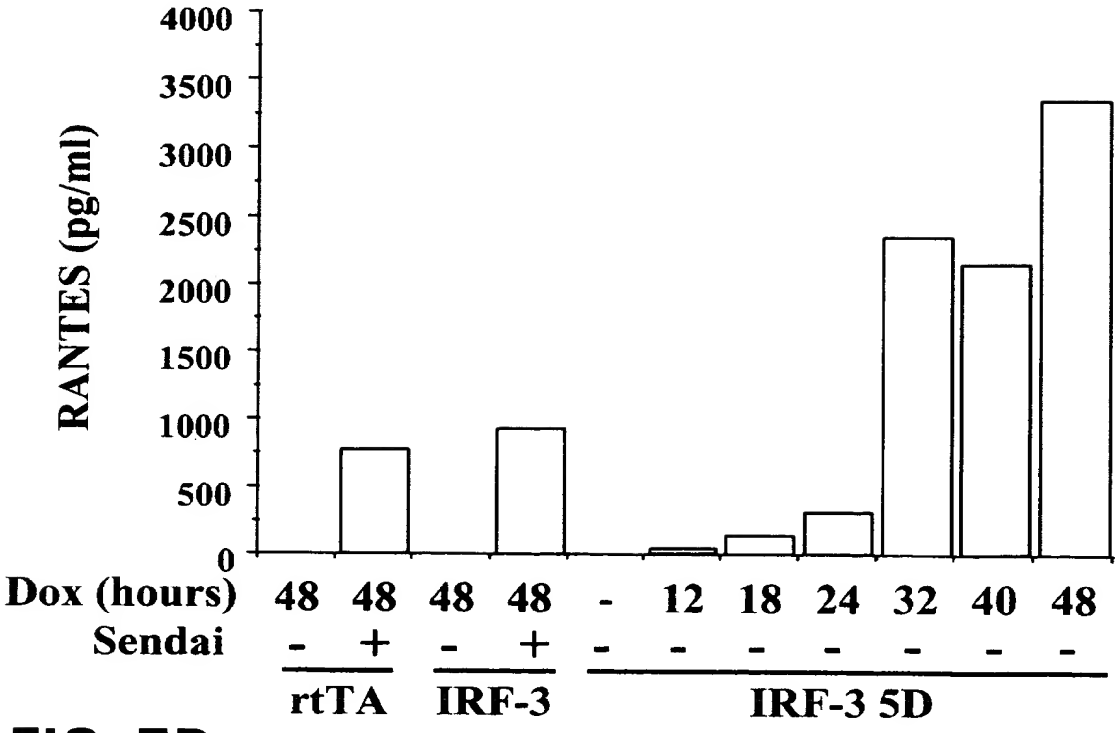
RANTES (pg/ml)
4000
3500
3000
2500
2000
1500
1000
500
0
Dox (hours) 48 48 48 48 - 12 18 24 32 40 48
Sendai - + - + - - - - - - -
rtTA
IRF-3
IRF-3 5D

FIG. 7D

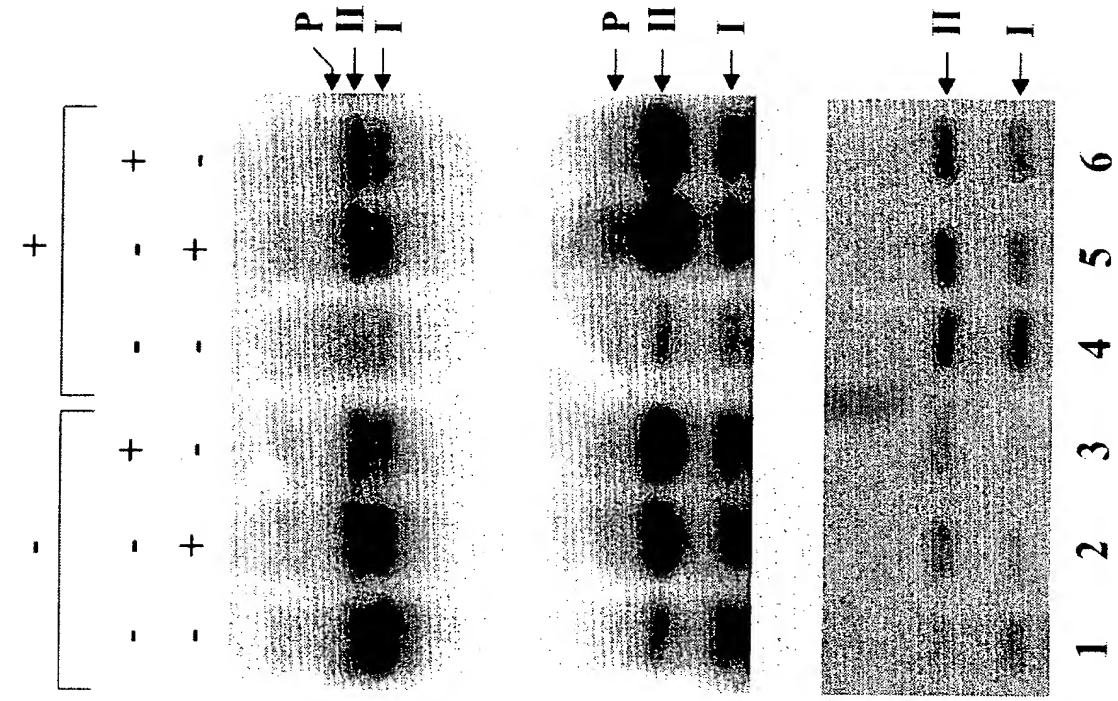

FIG. 8A Endogenous IRF-3

FIG. 8B IRF-3ΔN

FIG. 8C IRF-3ΔN5A

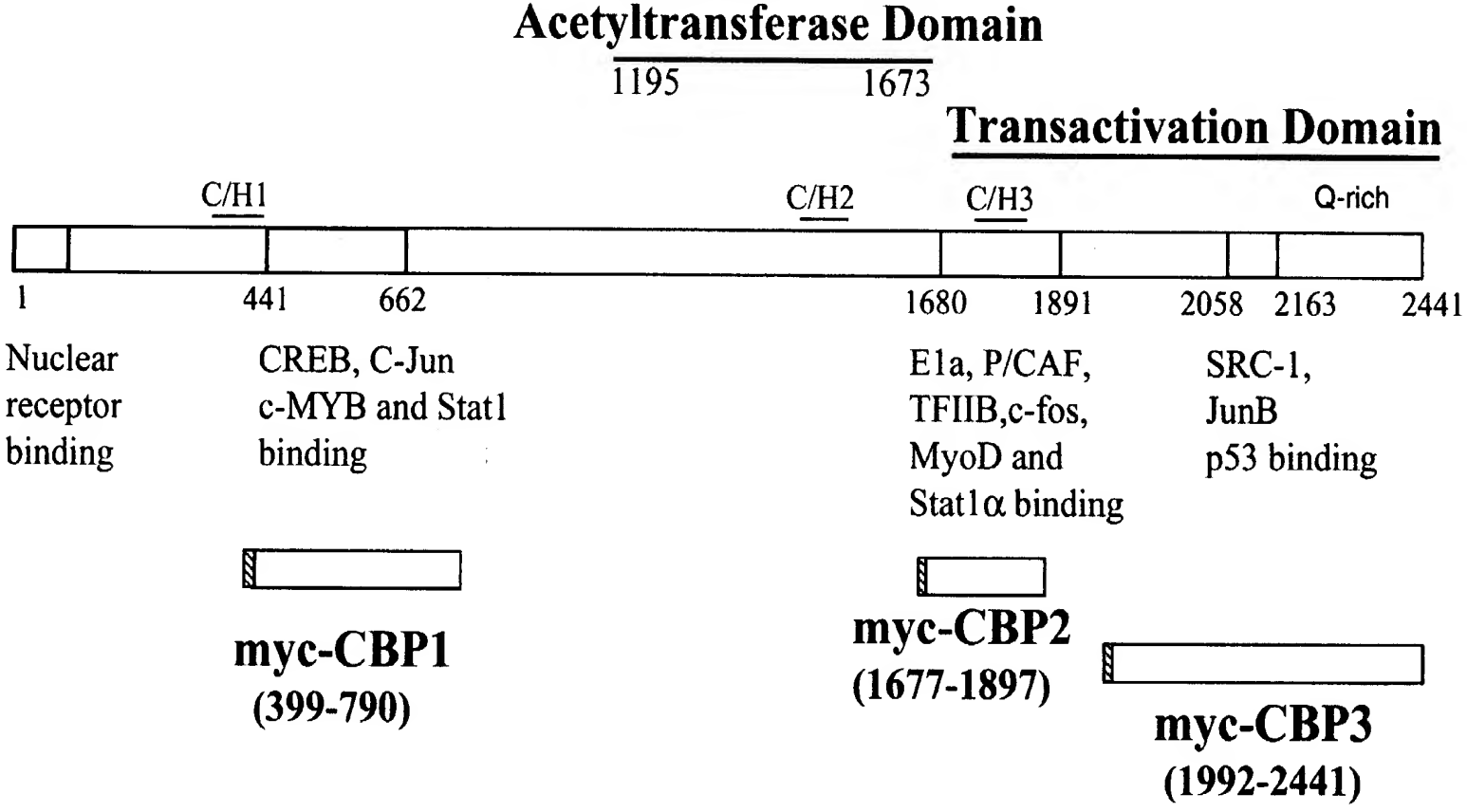

FIG. 9A

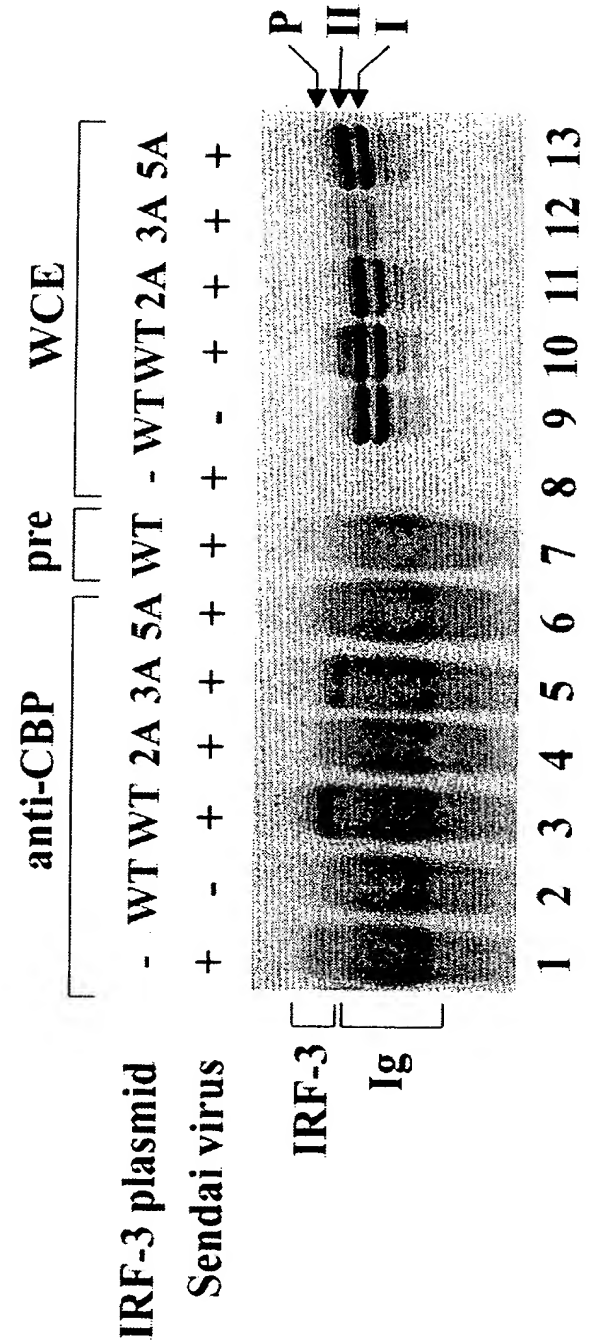
P
II
I
anti-CBP
pre
WCE
IRF-3 plasmid
Sendai virus
- WT WT 2A 3A 5A WT - WT WT 2A 3A 5A
+ - + + + + + - + + + + +
1 2 3 4 5 6 7 8 9 10 11 12 13
IRF-3
Ig

FIG. 9B

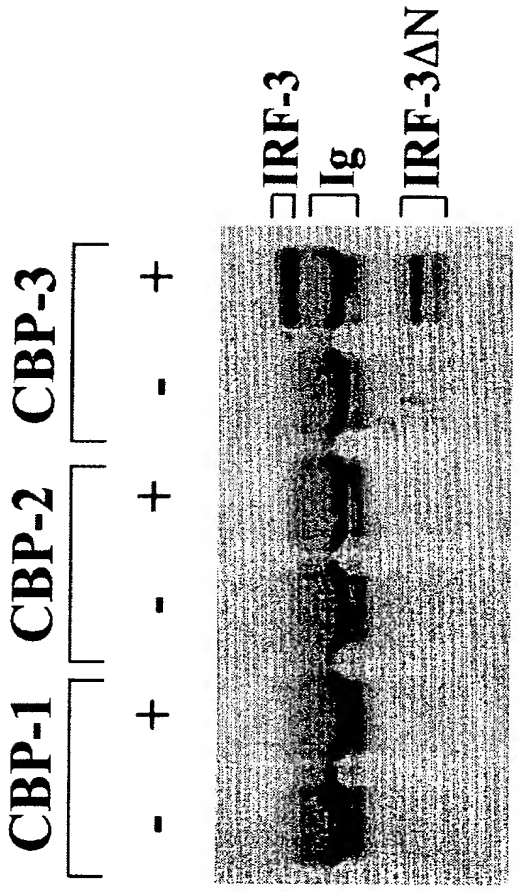
CBP-1
CBP-2
CBP-3
Sendai virus
- + - + - +
IRF-3
Ig
IRF-3ΔN

FIG. 9C

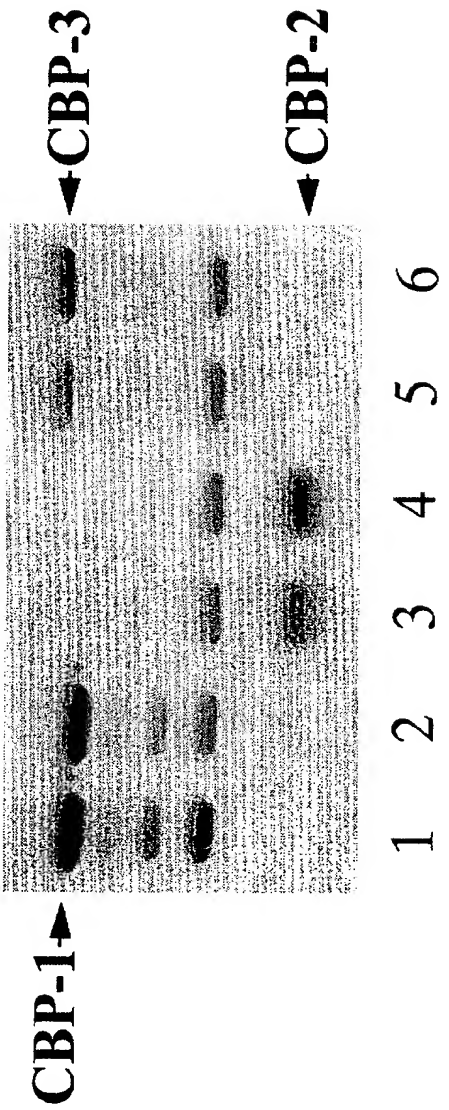
CBP-3
CBP-2
CBP-1
1 2 3 4 5 6

FIG. 9D

```
          10          20          30          40
           *           *           *           *
ATG GGA ACC CCA AAG CCA CGG ATC CTG CCC TGG CTG GTG TCG CAG CTG
TAC CCT TGG GGT TTC GGT GCC TAG GAC GGG ACC GAC CAC AGC GTC GAC
 M   G   T   P   K   P   R   I   L   P   W   L   V   S   Q   L>

50          60          70          80          90
 *           *           *           *           *
GAC CTG GGG CAA CTG GAG GGC GTG GCC TGG GTG AAC AAG AGC CGC ACG
CTG GAC CCC GTT GAC CTC CCG CAC CGG ACC CAC TTG TTC TCG GCG TGC
 D   L   G   Q   L   E   G   V   A   W   V   N   K   S   R   T>

  100         110         120         130         140
   *           *           *           *           *
CGC TTC CGC ATC CCT TGG AAG CAC GGC CTA CGG CAG GAT GCA CAG CAG
GCG AAG GCG TAG GGA ACC TTC GTG CCG GAT GCC GTC CTA CGT GTC GTC
 R   F   R   I   P   W   K   H   G   L   R   Q   D   A   Q   Q>

    150         160         170         180         190
     *           *           *           *           *
GAG GAT TTC GGA ATC TTC CAG GCC TGG GCC GAG GCC ACT GGT GCA TAT
CTC CTA AAG CCT TAG AAG GTC CGG ACC CGG CTC CGG TGA CCA CGT ATA
 E   D   F   G   I   F   Q   A   W   A   E   A   T   G   A   Y>

       200         210         220         230         240
        *           *           *           *           *
GTT CCC GGG AGG GAT AAG CCA GAC CTG CCA ACC TGG AAG AGG AAT TTC
CAA GGG CCC TCC CTA TTC GGT CTG GAC GGT TGG ACC TTC TCC TTA AAG
 V   P   G   R   D   K   P   D   L   P   T   W   K   R   N   F>

          250         260         270         280
           *           *           *           *
CGC TCT GCC CTC AAC CGC AAA GAA GGG TTG CGT TTA GCA GAG GAC CGG
GCG AGA CGG GAG TTG GCG TTT CTT CCC AAC GCA AAT CGT CTC CTG GCC
 R   S   A   L   N   R   K   E   G   L   R   L   A   E   D   R>

290         300         310         320         330
 *           *           *           *           *
AGC AAG GAC CCT CAC GAC CCA CAT AAA ATC TAC GAG TTT GTG AAC TCA
TCG TTC CTG GGA GTG CTG GGT GTA TTT TAG ATG CTC AAA CAC TTG AGT
 S   K   D   P   H   D   P   H   K   I   Y   E   F   V   N   S>

  340         350         360         370         380
   *           *           *           *           *
GGA GTT GGG GAC TTT TCC CAG CCA GAC ACC TCT CCG GAC ACC AAT GGT
CCT CAA CCC CTG AAA AGG GTC GGT CTG TGG AGA GGC CTG TGG TTA CCA
 G   V   G   D   F   S   Q   P   D   T   S   P   D   T   N   G>

     390         400         410         420         430
      *           *           *           *           *
GGA GGC AGT ACT TCT GAT ACC CAG GAA GAC ATT CTG GAT GAG TTA CTG
CCT CCG TCA TGA AGA CTA TGG GTC CTT CTG TAA GAC CTA CTC AAT GAC
 G   G   S   T   S   D   T   Q   E   D   I   L   D   E   L   L>
```

FIG. 10

```
        440           450           460           470           480
          *             *             *             *             *
GGT AAC ATG GTG TTG GCC CCA CTC CCA GAT CCG GGA CCC CCA AGC CTG
CCA TTG TAC CAC AAC CGG GGT GAG GGT CTA GGC CCT GGG GGT TCG GAC
 G   N   M   V   L   A   P   L   P   D   P   G   P   P   S   L>

            490           500           510           520
              *             *             *             *
GCT GTA GCC CCT GAG CCC TGC CCT CAG CCC CTG CGG AGC CCC AGC TTG
CGA CAT CGG GGA CTC GGG ACG GGA GTC GGG GAC GCC TCG GGG TCG AAC
 A   V   A   P   E   P   C   P   Q   P   L   R   S   P   S   L>

530           540           550           560           570
  *             *             *             *             *
GAC AAT CCC ACT CCC TTC CCA AAC CTG GGG CCC TCT GAG AAC CCA CTG
CTG TTA GGG TGA GGG AAG GGT TTG GAC CCC GGG AGA CTC TTG GGT GAC
 D   N   P   T   P   F   P   N   L   G   P   S   E   N   P   L>

  580           590           600           610           620
    *             *             *             *             *
AAG CGG CTG TTG GTG CCG GGG GAA GAG TGG GAG TTC GAG GTG ACA GCC
TTC GCC GAC AAC CAC GGC CCC CTT CTC ACC CTC AAG CTC CAC TGT CGG
 K   R   L   L   V   P   G   E   E   W   E   F   E   V   T   A>

      630           640           650           660           670
        *             *             *             *             *
TTC TAC CGG GGC CGC CAA GTC TTC CAG CAG ACC ATC TCC TGC CCG GAG
AAG ATG GCC CCG GCG GTT CAG AAG GTC GTC TGG TAG AGG ACG GGC CTC
 F   Y   R   G   R   Q   V   F   Q   Q   T   I   S   C   P   E>

        680           690           700           710           720
          *             *             *             *             *
GGC CTG CGG CTG GTG GGG TCC GAA GTG GGA GAC AGG ACG CTG CCT GGA
CCG GAC GCC GAC CAC CCC AGG CTT CAC CCT CTG TCC TGC GAC GGA CCT
 G   L   R   L   V   G   S   E   V   G   D   R   T   L   P   G>

            730           740           750           760
              *             *             *             *
TGG CCA GTC ACA CTG CCA GAC CCT GGC ATG TCC CTG ACA GAC AGG GGA
ACC GGT CAG TGT GAC GGT CTG GGA CCG TAC AGG GAC TGT CTG TCC CCT
 W   P   V   T   L   P   D   P   G   M   S   L   T   D   R   G>

770           780           790           800           810
  *             *             *             *             *
GTG ATG AGC TAC GTG AGG CAT GTG CTG AGC TGC CTG GGT GGG GGA CTG
CAC TAC TCG ATG CAC TCC GTA CAC GAC TCG ACG GAC CCA CCC CCT GAC
 V   M   S   Y   V   R   H   V   L   S   C   L   G   G   G   L>

  820           830           840           850           860
    *             *             *             *             *
GCT CTC TGG CGG GCC GGG CAG TGG CTC TGG GCC CAG CGG CTG GGG CAC
CGA GAG ACC GCC CGG CCC GTC ACC GAG ACC CGG GTC GCC GAC CCC GTG
 A   L   W   R   A   G   Q   W   L   W   A   Q   R   L   G   H>

      870           880           890           900           910
        *             *             *             *             *
TGC CAC ACA TAC TGG GCA GTG AGC GAG GAG CTG CTC CCC AAC AGC GGG
ACG GTG TGT ATG ACC CGT CAC TCG CTC CTC GAC GAG GGG TTG TCG CCC
 C   H   T   Y   W   A   V   S   E   E   L   L   P   N   S   G>
```

FIG. 10
CONTINUED

```
        920           930           940           950           960
          *             *             *             *             *
CAT GGG CCT GAT GGC GAG GTC CCC AAG GAC AAG GAA GGA GGC GTG TTT
GTA CCC GGA CTA CCG CTC CAG GGG TTC CTG TTC CTT CCT CCG CAC AAA
 H   G   P   D   G   E   V   P   K   D   K   E   G   G   V   F>

            970           980           990          1000
              *             *             *             *
GAC CTG GGG CCC TTC ATT GTA GAT CTG ATT ACC TTC ACG GAA GGA AGC
CTG GAC CCC GGG AAG TAA CAT CTA GAC TAA TGG AAG TGC CTT CCT TCG
 D   L   G   P   F   I   V   D   L   I   T   F   T   E   G   S>

1010          1020          1030          1040          1050
  *             *             *             *             *
GGA CGC TCA CCA CGC TAT GCC CTC TGG TTC TGT GTG GGG GAG TCA TGG
CCT GCG AGT GGT GCG ATA CGG GAG ACC AAG ACA CAC CCC CTC AGT ACC
 G   R   S   P   R   Y   A   L   W   F   C   V   G   E   S   W>

  1060          1070          1080          1090          1100
    *             *             *             *             *
CCC CAG GAC CAG CCG TGG ACC AAG AGG CTC GTG ATG GTC AAG GTT GTG
GGG GTC CTG GTC GGC ACC TGG TTC TCC GAG CAC TAC CAG TTC CAA CAC
 P   Q   D   Q   P   W   T   K   R   L   V   M   V   K   V   V>

    1110          1120          1130          1140          1150
      *             *             *             *             *
CCC ACG TGC CTC AGG GCC TTG GTA GAA ATG GCC CGG GTA GGG GGT GCC
GGG TGC ACG GAG TCC CGG AAC CAT CTT TAC CGG GCC CAT CCC CCA CGG
 P   T   C   L   R   A   L   V   E   M   A   R   V   G   G   A>

        1160          1170          1180          1190          1200
          *             *             *             *             *
TCC TCC CTG GAG AAT ACT GTG GAC CTG CAC ATT GAC AAC GAC CAC CCA
AGG AGG GAC CTC TTA TGA CAC CTG GAC GTG TAA CTG TTG CTG GTG GGT
 S   S   L   E   N   T   V   D   L   H   I   D   N   D   H   P>

            1210          1220          1230          1240
              *             *             *             <   *
CTC GAC CTC GAC GAC GAC CAG TAC AAG GCC TAC CTG CAG GAC TTG GTG
GAG CTG GAG CTG CTG CTG GTC ATG TTC CGG ATG GAC GTC CTG AAC CAC
 L   D   L   D   D   D   Q   Y   K   A   Y   L   Q   D   L   V>

1250          1260          1270          1280
  *             *             *             *
GAG GGC ATG GAT TTC CAG GGC CCT GGG GAG AGC TGA
CTC CCG TAC CTA AAG GTC CCG GGA CCC CTC TCG ACT
 E   G   M   D   F   Q   G   P   G   E   S>
```

FIG. 10
CONTINUED

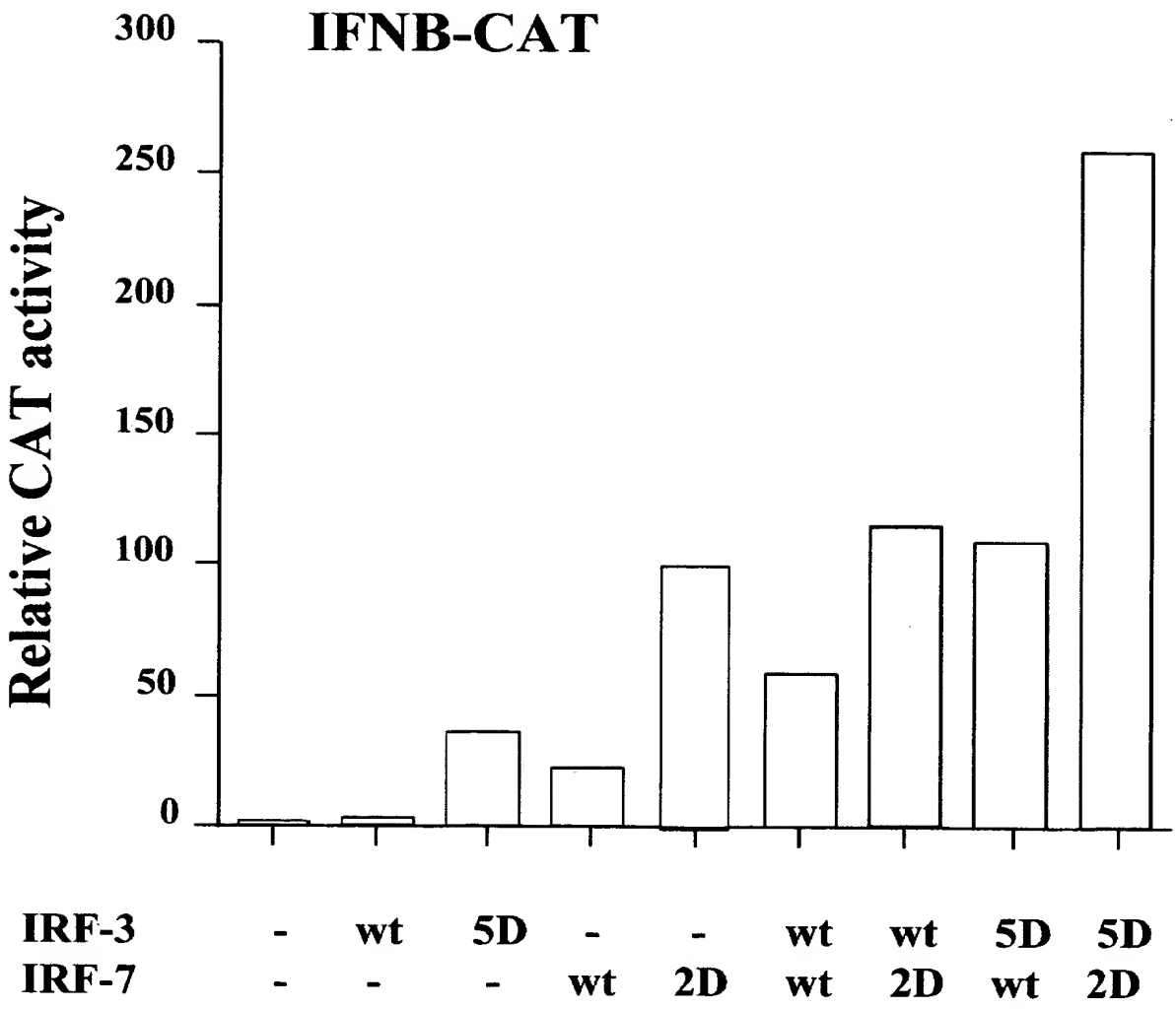
IFNB-CAT
Relative CAT activity
300
250
200
150
100
50
0
IRF-3 - wt 5D - - wt wt 5D 5D
IRF-7 - - - wt 2D wt 2D wt 2D

FIG. 11

```
          10          20          30          40
           *           *           *           *
ATG GCC TTG GCT CCT GAG AGG GCA GCC CCA CGC GTG CTG TTC GGA GAG
TAC CGG AAC CGA GGA CTC TCC CGT CGG GGT GCG CAC GAC AAG CCT CTC
 M   A   L   A   P   E   R   A   A   P   R   V   L   F   G   E>

50          60          70          80          90
 *           *           *           *           *
TGG CTC CTT GGA GAG ATC AGC AGC GGC TGC TAT GAG GGG CTG CAG TGG
ACC GAG GAA CCT CTC TAG TCG TCG CCG ACG ATA CTC CCC GAC GTC ACC
 W   L   L   G   E   I   S   S   G   C   Y   E   G   L   Q   W>

  100         110         120         130         140
   *           *           *           *           *
CTG GAC GAG GCC CGC ACC TGT TTC CGC GTG CCC TGG AAG CAC TTC GCG
GAC CTG CTC CGG GCG TGG ACA AAG GCG CAC GGG ACC TTC GTG AAG CGC
 L   D   E   A   R   T   C   F   R   V   P   W   K   H   F   A>

    150         160         170         180         190
     *           *           *           *           *
CGC AAG GAC CTG AGC GAG GCC GAC GCG CGC ATC TTC AAG GCC TGG GCT
GCG TTC CTG GAC TCG CTC CGG CTG CGC GCG TAG AAG TTC CGG ACC CGA
 R   K   D   L   S   E   A   D   A   R   I   F   K   A   W   A>

       200         210         220         230         240
        *           *           *           *           *
GTG GCC CGC GGC AGG TGG CCG CCT AGC AGC AGG GGA GGT GGC CCG CCC
CAC CGG GCG CCG TCC ACC GGC GGA TCG TCG TCC CCT CCA CCG GGC GGG
 V   A   R   G   R   W   P   P   S   S   R   G   G   G   P   P>

          250         260         270         280
           *           *           *           *
CCC GAG GCT GAG ACT GCG GAG CGC GCC GGC TGG AAA ACC AAC TTC CGC
GGG CTC CGA CTC TGA CGC CTC GCG CGG CCG ACC TTT TGG TTG AAG GCG
 P   E   A   E   T   A   E   R   A   G   W   K   T   N   F   R>

290         300         310         320         330
 *           *           *           *           *
TGC GCA CTG CGC AGC ACG CGT CGC TTC GTG ATG CTG CGG GAT AAC TCG
ACG CGT GAC GCG TCG TGC GCA GCG AAG CAC TAC GAC GCC CTA TTG AGC
 C   A   L   R   S   T   R   R   F   V   M   L   R   D   N   S>

  340         350         360         370         380
   *           *           *           *           *
GGG GAC CCG GCC GAC CCG CAC AAG GTG TAC GCG CTC AGC CGG GAG CTG
CCC CTG GGC CGG CTG GGC GTG TTC CAC ATG CGC GAG TCG GCC CTC GAC
 G   D   P   A   D   P   H   K   V   Y   A   L   S   R   E   L>
```

FIG. 12

```
     390               400               410               420               430
       *                 *                 *                 *                 *
TGC TGG CGA GAA GGC CCA GGC ACG GAC CAG ACT GAG GCA GAG GCC CCC
ACG ACC GCT CTT CCG GGT CCG TGC CTG GTC TGA CTC CGT CTC CGG GGG
 C   W   R   E   G   P   G   T   D   Q   T   E   A   E   A   P>

        440               450               460               470               480
          *                 *                 *                 *                 *
GCA GCT GTC CCA CCA CCA CAG GGT GGG CCC CCA GGG CCA TTC TTG GCA
CGT CGA CAG GGT GGT GGT GTC CCA CCC GGG GGT CCC GGT AAG AAC CGT
 A   A   V   P   P   P   Q   G   G   P   P   G   P   F   L   A>

            490               500               510               520
              *                 *                 *                 *
CAC ACA CAT GCT GGA CTC CAA GCC CCA GGC CCC CTC CCT GCC CCA GCT
GTG TGT GTA CGA CCT GAG GTT CGG GGT CCG GGG GAG GGA CGG GGT CGA
 H   T   H   A   G   L   Q   A   P   G   P   L   P   A   P   A>

530               540               550               560               570
  *                 *                 *                 *                 *
GGT GAC AAG GGG GAC CTC CTG CTC CAG GCA GTG CAA CAG AGC TGC CTG
CCA CTG TTC CCC CTG GAG GAC GAG GTC CGT CAC GTT GTC TCG ACG GAC
 G   D   K   G   D   L   L   L   Q   A   V   Q   Q   S   C   L>

    580               590               600               610               620
      *                 *                 *                 *                 *
GCA GAC CAT CTG CTG ACA GCG TCA TGG GGG GCA GAT CCA GTC CCA ACC
CGT CTG GTA GAC GAC TGT CGC AGT ACC CCC CGT CTA GGT CAG GGT TGG
 A   D   H   L   L   T   A   S   W   G   A   D   P   V   P   T>

     630               640               650               660               670
       *                 *                 *                 *                 *
AAG GCT CCT GGA GAG GGA CAA GAA GGG CTT CCC CTG ACT GGG GCC TGT
TTC CGA GGA CCT CTC CCT GTT CTT CCC GAA GGG GAC TGA CCC CGG ACA
 K   A   P   G   E   G   Q   E   G   L   P   L   T   G   A   C>

        680               690               700               710               720
          *                 *                 *                 *                 *
GCT GGA GGC CCA GGG CTC CCT GCT GGG GAG CTG TAC GGG TGG GCA GTA
CGA CCT CCG GGT CCC GAG GGA CGA CCC CTC GAC ATG CCC ACC CGT CAT
 A   G   G   P   G   L   P   A   G   E   L   Y   G   W   A   V>

            730               740               750               760
              *                 *                 *                 *
GAG ACG ACC CCC AGC CCC GGG CCC CAG CCC GCG GCA CTA ACG ACA GGC
CTC TGC TGG GGG TCG GGG CCC GGG GTC GGG CGC CGT GAT TGC TGT CCG
 E   T   T   P   S   P   G   P   Q   P   A   A   L   T   T   G>
```

FIG. 12
CONTINUED

```
770          780          790          800          810
 *            *            *            *            *
GAG GCC GCG GCC CCA GAG TCC CCG CAC CAG GCA GAG CCG TAC CTG TCA
CTC CGG CGC CGG GGT CTC AGG GGC GTG GTC CGT CTC GGC ATG GAC AGT
 E   A   A   A   P   E   S   P   H   Q   A   E   P   Y   L   S>

  820          830          840          850          860
   *            *            *            *            *
CCC TCC CCA AGC GCC TGC ACC GCG GTG CAA GAG CCC AGC CCA GGG GCG
GGG AGG GGT TCG CGG ACG TGG CGC CAC GTT CTC GGG TCG GGT CCC CGC
 P   S   P   S   A   C   T   A   V   Q   E   P   S   P   G   A>

    870          880          890          900          910
     *            *            *            *            *
CTG GAC GTG ACC ATC ATG TAC AAG GGC CGC ACG GTG CTG CAG AAG GTG
GAC CTG CAC TGG TAG TAC ATG TTC CCG GCG TGC CAC GAC GTC TTC CAC
 L   D   V   T   I   M   Y   K   G   R   T   V   L   Q   K   V>

       920          930          940          950          960
        *            *            *            *            *
GTG GGA CAC CCG AGC TGC ACG TTC CTA TAC GGC CCC CCA GAC CCA GCT
CAC CCT GTG GGC TCG ACG TGC AAG GAT ATG CCG GGG GGT CTG GGT CGA
 V   G   H   P   S   C   T   F   L   Y   G   P   P   D   P   A>

           970          980          990          1000
            *            *            *            *
GTC CGG GCC ACA GAC CCC CAG CAG GTA GCA TTC CCC AGC CCT GCC GAG
CAG GCC CGG TGT CTG GGG GTC GTC CAT CGT AAG GGG TCG GGA CGG CTC
 V   R   A   T   D   P   Q   Q   V   A   F   P   S   P   A   E>

1010         1020         1030         1040         1050
 *            *            *            *            *
CTC CCG GAC CAG AAG CAG CTG CGC TAC ACG GAG GAA CTG CTG CGG CAC
GAG GGC CTG GTC TTC GTC GAC GCG ATG TGC CTC CTT GAC GAC GCC GTG
 L   P   D   Q   K   Q   L   R   Y   T   E   E   L   L   R   H>

  1060         1070         1080         1090         1100
   *            *            *            *            *
GTG GCC CCT GGG TTG CAC CTG GAG CTT CGG GGG CCA CAG CTG TGG GCC
CAC CGG GGA CCC AAC GTG GAC CTC GAA GCC CCC GGT GTC GAC ACC CGG
 V   A   P   G   L   H   L   E   L   R   G   P   Q   L   W   A>

    1110         1120         1130         1140         1150
     *            *            *            *            *
CGG CGC ATG GGC AAG TGC AAG GTG TAC TGG GAG GTG GGC GGA CCC CCA
GCC GCG TAC CCG TTC ACG TTC CAC ATG ACC CTC CAC CCG CCT GGG GGT
 R   R   M   G   K   C   K   V   Y   W   E   V   G   G   P   P>
```

FIG. 12
CONTINUED

```
      1160          1170          1180          1190          1200
         *             *             *             *             *
GGC TCC GCC AGC CCC TCC ACC CCA GCC TGC CTG CTG CCT CGG AAC TGT
CCG AGG CGG TCG GGG AGG TGG GGT CGG ACG GAC GAC GGA GCC TTG ACA
 G   S   A   S   P   S   T   P   A   C   L   L   P   R   N   C>

          1210          1220          1230          1240
             *             *             *             *
GAC ACC CCC ATC TTC GAC TTC AGA GTC TTC TTC CAA GAG CTG GTG GAA
CTG TGG GGG TAG AAG CTG AAG TCT CAG AAG AAG GTT CTC GAC CAC CTT
 D   T   P   I   F   D   F   R   V   F   F   Q   E   L   V   E>

1250          1260          1270          1280          1290
   *             *             *             *             *
TTC CGG GCA CGG CAG CGC CGT GGC TCC CCA CGC TAT ACC ATC TAC CTG
AAG GCC CGT GCC GTC GCG GCA CCG AGG GGT GCG ATA TGG TAG ATG GAC
 F   R   A   R   Q   R   R   G   S   P   R   Y   T   I   Y   L>

   1300          1310          1320          1330          1340
      *             *             *             *             *
GGC TTC GGG CAG GAC CTG TCA GCT GGG AGG CCC AAG GAG AAG AGC CTG
CCG AAG CCC GTC CTG GAC AGT CGA CCC TCC GGG TTC CTC TTC TCG GAC
 G   F   G   Q   D   L   S   A   G   R   P   K   E   K   S   L>

     1350          1360          1370          1380          1390
        *             *             *             *             *
GTC CTG GTG AAG CTG GAA CCC TGG CTG TGC CGA GTG CAC CTA GAG GGC
CAG GAC CAC TTC GAC CTT GGG ACC GAC ACG GCT CAC GTG GAT CTC CCG
 V   L   V   K   L   E   P   W   L   C   R   V   H   L   E   G>

      1400          1410          1420          1430          1440
         *             *             *             *             *
ACG CAG CGT GAG GGT GTG TCT TCC CTG GAT AGC AGC GAC CTC GAC CTC
TGC GTC GCA CTC CCA CAC AGA AGG GAC CTA TCG TCG CTG GAG CTG GAG
 T   Q   R   E   G   V   S   S   L   D   S   S   D   L   D   L>

          1450          1460          1470          1480
             *             *             *             *
TGC CTG TCC AGC GCC AAC AGC CTC TAT GAC GAC ATC GAG TGC TTC CTT
ACG GAC AGG TCG CGG TTG TCG GAG ATA CTG CTG TAG CTC ACG AAG GAA
 C   L   S   S   A   N   S   L   Y   D   D   I   E   C   F   L>

1490          1500          1510
   *             *             *
ATG GAG CTG GAG CAG CCC GCC TAG
TAC CTC GAC CTC GTC GGG CGG ATC
 M   E   L   E   Q   P   A>
```

FIG. 12

CONTINUED

```
          10          20          30          40
           *           *           *           *
ATG GCC TTG GCT CCT GAG AGG GCA GCC CCA CGC GTG CTG TTC GGA GAG
TAC CGG AAC CGA GGA CTC TCC CGT CGG GGT GCG CAC GAC AAG CCT CTC
 M   A   L   A   P   E   R   A   A   P   R   V   L   F   G   E>

50          60          70          80          90
 *           *           *           *           *
TGG CTC CTT GGA GAG ATC AGC AGC GGC TGC TAT GAG GGG CTG CAG TGG
ACC GAG GAA CCT CTC TAG TCG TCG CCG ACG ATA CTC CCC GAC GTC ACC
 W   L   L   G   E   I   S   S   G   C   Y   E   G   L   Q   W>

  100         110         120         130         140
    *           *           *           *           *
CTG GAC GAG GCC CGC ACC TGT TTC CGC GTG CCC TGG AAG CAC TTC GCG
GAC CTG CTC CGG GCG TGG ACA AAG GCG CAC GGG ACC TTC GTG AAG CGC
 L   D   E   A   R   T   C   F   R   V   P   W   K   H   F   A>

    150         160         170         180         190
      *           *           *           *           *
CGC AAG GAC CTG AGC GAG GCC GAC GCG CGC ATC TTC AAG GCC TGG GCT
GCG TTC CTG GAC TCG CTC CGG CTG CGC GCG TAG AAG TTC CGG ACC CGA
 R   K   D   L   S   E   A   D   A   R   I   F   K   A   W   A>

       200         210         220         230         240
         *           *           *           *           *
GTG GCC CGC GGC AGG TGG CCG CCT AGC AGC AGG GGA GGT GGC CCG CCC
CAC CGG GCG CCG TCC ACC GGC GGA TCG TCG TCC CCT CCA CCG GGC GGG
 V   A   R   G   R   W   P   P   S   S   R   G   G   G   P   P>

          250         260         270         280
           *           *           *           *
CCC GAG GCT GAG ACT GCG GAG CGC GCC GGC TGG AAA ACC AAC TTC CGC
GGG CTC CGA CTC TGA CGC CTC GCG CGG CCG ACC TTT TGG TTG AAG GCG
 P   E   A   E   T   A   E   R   A   G   W   K   T   N   F   R>

290         300         310         320         330
 *           *           *           *           *
TGC GCA CTG CGC AGC ACG CGT CGC TTC GTG ATG CTG CGG GAT AAC TCG
ACG CGT GAC GCG TCG TGC GCA GCG AAG CAC TAC GAC GCC CTA TTG AGC
 C   A   L   R   S   T   R   R   F   V   M   L   R   D   N   S>
```

FIG. 13

```
   340           350           360           370           380
    *             *             *             *             *
GGG GAC CCG GCC GAC CCG CAC AAG GTG TAC GCG CTC AGC CGG GAG CTG
CCC CTG GGC CGG CTG GGC GTG TTC CAC ATG CGC GAG TCG GCC CTC GAC
 G   D   P   A   D   P   H   K   V   Y   A   L   S   R   E   L>

     390           400           410           420           430
      *             *             *             *             *
TGC TGG CGA GAA GGC CCA GGC ACG GAC CAG ACT GAG GCA GAG GCC CCC
ACG ACC GCT CTT CCG GGT CCG TGC CTG GTC TGA CTC CGT CTC CGG GGG
 C   W   R   E   G   P   G   T   D   Q   T   E   A   E   A   P>

        440           450           460           470           480
         *             *             *             *             *
GCA GCT GTC CCA CCA CCA CAG GGT GGG CCC CCA GGG CCA TTC TTG GCA
CGT CGA CAG GGT GGT GGT GTC CCA CCC GGG GGT CCC GGT AAG AAC CGT
 A   A   V   P   P   P   Q   G   G   P   P   G   P   F   L   A>

            490           500           510           520
             *             *             *             *
CAC ACA CAT GCT GGA CTC CAA GCC CCA GGC CCC CTC CCT GCC CCA GCT
GTG TGT GTA CGA CCT GAG GTT CGG GGT CCG GGG GAG GGA CGG GGT CGA
 H   T   H   A   G   L   Q   A   P   G   P   L   P   A   P   A>

530           540           550           560           570
 *             *             *             *             *
GGT GAC AAG GGG GAC CTC CTG CTC CAG GCA GTG CAA CAG AGC TGC CTG
CCA CTG TTC CCC CTG GAG GAC GAG GTC CGT CAC GTT GTC TCG ACG GAC
 G   D   K   G   D   L   L   L   Q   A   V   Q   Q   S   C   L>

   580           590           600           610           620
    *             *             *             *             *
GCA GAC CAT CTG CTG ACA GCG TCA TGG GGG GCA GAT CCA GTC CCA ACC
CGT CTG GTA GAC GAC TGT CGC AGT ACC CCC CGT CTA GGT CAG GGT TGG
 A   D   H   L   L   T   A   S   W   G   A   D   P   V   P   T>

     630           640           650           660           670
      *             *             *             *             *
AAG GCT CCT GGA GAG GGA CAA GAA GGG CTT CCC CTG ACT GGG GCC TGT
TTC CGA GGA CCT CTC CCT GTT CTT CCC GAA GGG GAC TGA CCC CGG ACA
 K   A   P   G   E   G   Q   E   G   L   P   L   T   G   A   C>

        680           690           700           710           720
         *             *             *             *             *
GCT GGA GGC CCA GGG CTC CCT GCT GGG GAG CTG TAC GGG TGG GCA GTA
CGA CCT CCG GGT CCC GAG GGA CGA CCC CTC GAC ATG CCC ACC CGT CAT
 A   G   G   P   G   L   P   A   G   E   L   Y   G   W   A   V>
```

FIG. 13
CONTINUED

```
            730         740         750         760
             *           *           *           *
GAG ACG ACC CCC AGC CCC ACT TCT GAT ACC CAG GAA GAC ATT CTG GAT
CTC TGC TGG GGG TCG GGG TGA AGA CTA TGG GTC CTT CTG TAA GAC CTA
 E   T   T   P   S   P   T   S   D   T   Q   E   D   I   L   D>

770         780         790         800         810
 *           *           *           *           *
GAG TTA CTG GGT AAC ATG GTG TTG GCC CCA CTC CCA GAT CCG GGA CCC
CTC AAT GAC CCA TTG TAC CAC AAC CGG GGT GAG GGT CTA GGC CCT GGG
 E   L   L   G   N   M   V   L   A   P   L   P   D   P   G   P>

  820         830         840         850         860
   *           *           *           *           *
CCA AGC CTG GCT GTA GCC CCT GAG CCC TGC CCT CAG CCC CTG CGG AGC
GGT TCG GAC CGA CAT CGG GGA CTC GGG ACG GGA GTC GGG GAC GCC TCG
 P   S   L   A   V   A   P   E   P   C   P   Q   P   L   R   S>

    870         880         890         900         910
     *           *           *           *           *
CCC AGC TTG GAC AAT CCC ACT CCC TTC CCA AAC CTG GGG CCC TCT GAG
GGG TCG AAC CTG TTA GGG TGA GGG AAG GGT TTG GAC CCC GGG AGA CTC
 P   S   L   D   N   P   T   P   F   P   N   L   G   P   S   E>

       920         930         940         950         960
        *           *           *           *           *
AAC CCA CTG AAG CGG CTG TTG GTG CCG GGG GAA GAG TGG GAG TTC GAG
TTG GGT GAC TTC GCC GAC AAC CAC GGC CCC CTT CTC ACC CTC AAG CTC
 N   P   L   K   R   L   L   V   P   G   E   E   W   E   F   E>

            970         980         990        1000
             *           *           *           *
GTG ACA GCC TTC TAC CGG GGC CGC CAA GTC TTC CAG CAG ACC ATC TCC
CAC TGT CGG AAG ATG GCC CCG GCG GTT CAG AAG GTC GTC TGG TAG AGG
 V   T   A   F   Y   R   G   R   Q   V   F   Q   Q   T   I   S>

1010        1020        1030        1040        1050
 *           *           *           *           *
TGC CCG GAG GGC CTG CGG CTG GTG GGG TCC GAA GTG GGA GAC AGG ACG
ACG GGC CTC CCG GAC GCC GAC CAC CCC AGG CTT CAC CCT CTG TCC TGC
 C   P   E   G   L   R   L   V   G   S   E   V   G   D   R   T>

  1060        1070        1080        1090        1100
   *           *           *           *           *
CTG CCT GGA TGG CCA GTC ACA CTG CCA GAC CCT GGC ATG TCC CTG ACA
GAC GGA CCT ACC GGT CAG TGT GAC GGT CTG GGA CCG TAC AGG GAC TGT
 L   P   G   W   P   V   T   L   P   D   P   G   M   S   L   T>
```

FIG. 13
CONTINUED

```
    1110          1120          1130          1140          1150
      *             *             *             *             *
GAC AGG GGA GTG ATG AGC TAC GTG AGG CAT GTG CTG AGC TGC CTG GGT
CTG TCC CCT CAC TAC TCG ATG CAC TCC GTA CAC GAC TCG ACG GAC CCA
 D   R   G   V   M   S   Y   V   R   H   V   L   S   C   L   G>

      1160          1170          1180          1190          1200
        *             *             *             *             *
GGG GGA CTG GCT CTC TGG CGG GCC GGG CAG TGG CTC TGG GCC CAG CGG
CCC CCT GAC CGA GAG ACC GCC CGG CCC GTC ACC GAG ACC CGG GTC GCC
 G   G   L   A   L   W   R   A   G   Q   W   L   W   A   Q   R>

          1210          1220          1230          1240
            *             *             *             *
CTG GGG CAC TGC CAC ACA TAC TGG GCA GTG AGC GAG GAG CTG CTC CCC
GAC CCC GTG ACG GTG TGT ATG ACC CGT CAC TCG CTC CTC GAC GAG GGG
 L   G   H   C   H   T   Y   W   A   V   S   E   E   L   L   P>

1250          1260          1270          1280          1290
  *             *             *             *             *
AAC AGC GGG CAT GGG CCT GAT GGC GAG GTC CCC AAG GAC AAG GAA GGA
TTG TCG CCC GTA CCC GGA CTA CCG CTC CAG GGG TTC CTG TTC CTT CCT
 N   S   G   H   G   P   D   G   E   V   P   K   D   K   E   G>

  1300          1310          1320          1330          1340
    *             *             *             *             *
GGC GTG TTT GAC CTG GGG CCC TTC ATT GTA GAT CTG ATT ACC TTC ACG
CCG CAC AAA CTG GAC CCC GGG AAG TAA CAT CTA GAC TAA TGG AAG TGC
 G   V   F   D   L   G   P   F   I   V   D   L   I   T   F   T>

    1350          1360          1370          1380          1390
      *             *             *             *             *
GAA GGA AGC GGA CGC TCA CCA CGC TAT GCC CTC TGG TTC TGT GTG GGG
CTT CCT TCG CCT GCG AGT GGT GCG ATA CGG GAG ACC AAG ACA CAC CCC
 E   G   S   G   R   S   P   R   Y   A   L   W   F   C   V   G>

      1400          1410          1420          1430          1440
        *             *             *             *             *
GAG TCA TGG CCC CAG GAC CAG CCG TGG ACC AAG AGG CTC GTG ATG GTC
CTC AGT ACC GGG GTC CTG GTC GGC ACC TGG TTC TCC GAG CAC TAC CAG
 E   S   W   P   Q   D   Q   P   W   T   K   R   L   V   M   V>

          1450          1460          1470          1480
            *             *             *             *
AAG GTT GTG CCC ACG TGC CTC AGG GCC TTG GTA GAA ATG GCC CGG GTA
TTC CAA CAC GGG TGC ACG GAG TCC CGG AAC CAT CTT TAC CGG GCC CAT
 K   V   V   P   T   C   L   R   A   L   V   E   M   A   R   V>

1490          1500          1510          1520          1530
  *             *             *             *             *
GGG GGT GCC TCC TCC CTG GAG AAT ACT GTG GAC CTG CAC ATT GAC AAC
CCC CCA CGG AGG AGG GAC CTC TTA TGA CAC CTG GAC GTG TAA CTG TTG
 G   G   A   S   S   L   E   N   T   V   D   L   H   I   D   N>
```

FIG. 13
CONTINUED

```
1540          1550          1560          1570          1580
   *             *             *             *             *
GAC CAC CCA CTC GAC CTC GAC GAC GAC CAG TAC AAG GCC TAC CTG CAG
CTG GTG GGT GAG CTG GAG CTG CTG CTG GTC ATG TTC CGG ATG GAC GTC
 D   H   P   L   D   L   D   D   D   Q   Y   K   A   Y   L   Q>

  1590          1600          1610          1620
     *             *             *             *
GAC TTG GTG GAG GGC ATG GAT TTC CAG GGC CCT GGG GAG AGC TGA
CTG AAC CAC CTC CCG TAC CTA AAG GTC CCG GGA CCC CTC TCG ACT
 D   L   V   E   G   M   D   F   Q   G   P   G   E   S>
```

FIG. 13
CONTINUED

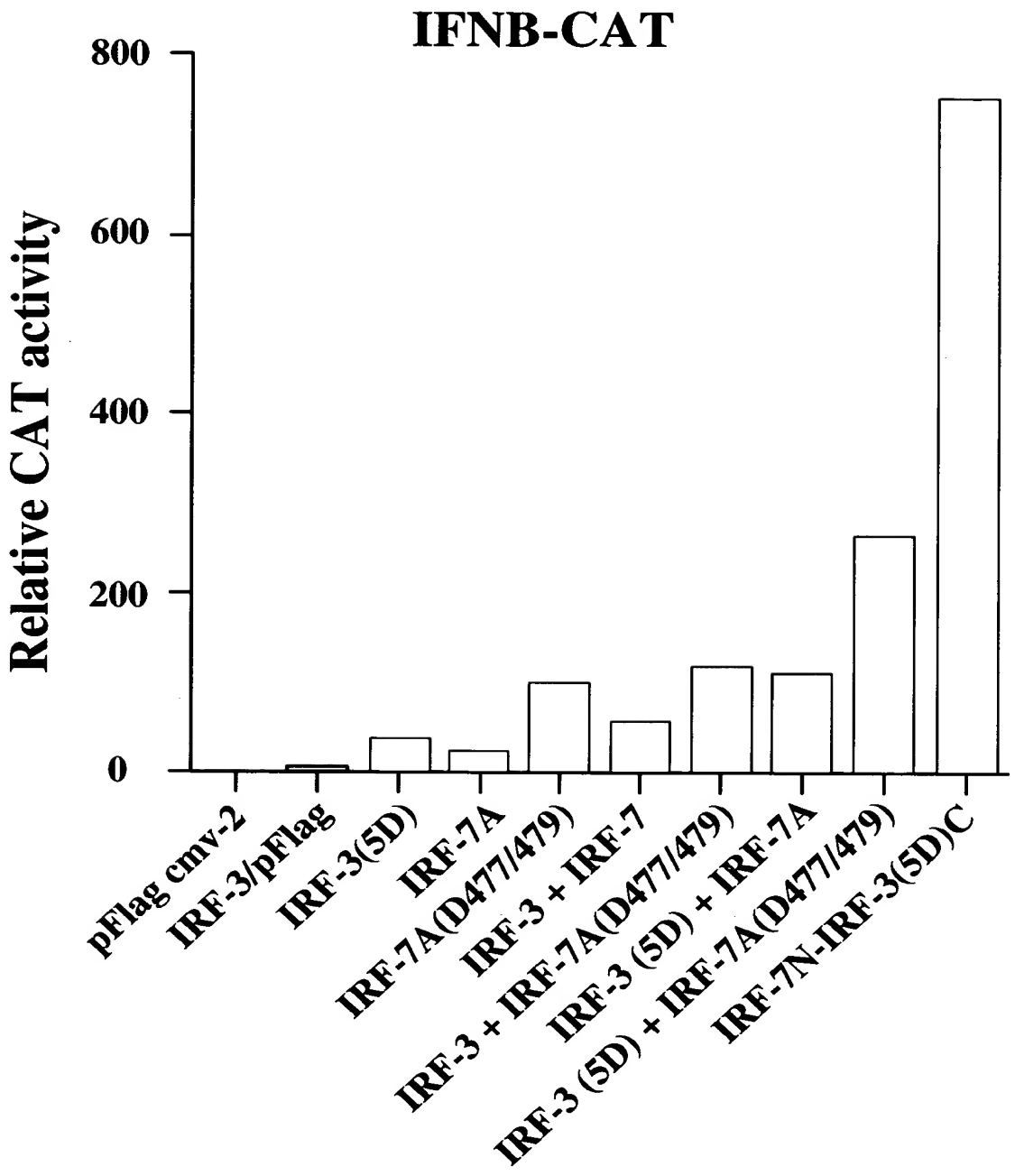
IFNB-CAT
Relative CAT activity
800
600
400
200
0
pFlag cmv-2
IRF-3/pFlag
IRF-3(5D)
IRF-7A
IRF-7A(D477/479)
IRF-3 + IRF-7
IRF-3 + IRF-7A(D477/479)
IRF-3 (5D) + IRF-7A
IRF-3 (5D) + IRF-7A(D477/479)
IRF-7N-IRF-3(5D)C

FIG. 14